Formates Category - Comments of Environmental Defense

(Submitted via Internet 12/19/02)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for the Formates Category.

General Comment:
The Formic Acid and Formates Panel (Panel) of the American Chemistry Council proposes that formic acid (CAS# 64-18-6) and three formates, sodium formate (CAS# 141-53-7), calcium formate (CAS# 544-17-2) and methyl formate (CAS# 107-31-3) be considered together for the EPA High Production Volume Chemicals Challenge as a category. In support of this proposal, the Panel has submitted what appears to be a clear and concise Test Plan that accurately summarizes an extensive Robust Summary.

Based on our review of material posted on the EPA web site, we support the consideration of these chemicals as a category. Our greatest concern regarding chemicals in this category is the fact that humans are considerably more sensitive to formate toxicity than are the test animals for which data are described in this Robust Summary/Test Plan. Therefore, variations of the statement, "The fact that formates are a normal constituent of human metabolism further reduces the concern of low-level hazard" that are used throughout the Test Plan appear unwarranted. That is, it is well established that humans are orders of magnitude more sensitive to formate toxicity than the rodents that have been used in most of studies of formate toxicity. Further, all available evidence indicates that humans are more sensitive to formate toxicity than the primates that have been studied. Therefore, the margin of safety above background levels is much lower for humans than test animals studied and it is very possible that formates pose a low-level hazard to human health. Unfortunately, since humans are so much more sensitive than animals, we do not have an appropriate animal model in which we can test this hypothesis. Thus, the possibility of a smaller margin of safety for humans should be discussed in the Test Plan and statements to the effect that low-level exposures pose no risks should be removed.

Specific Comments:
1. It is stated in the second paragraph of page 10 that on a milliequivalents per kilogram body weight basis methyl formate is less toxic than the other formates. That fact is not obvious on examination of the data in the table supporting this statement. However, that apparent lack of evidence may be due in part to the fact that the fourth column of the table is blacked out on the version posted on the EPA web site.
2. The Panel is to be complemented on the fact that the Test Plan summary presents an excellent description of the various uses of the formates and sources of possible human exposure. While such data are not required under the HPV initiated, their inclusion is very welcome and highly useful in evaluating the overall document.
3. In addition to data describing the toxicity of the formates, the Test Plan should also include data describing the toxicity of methanol, which is metabolized to almost exclusively to formate. A table describing methanol toxicity should include data for primates and humans in order to illustrate the much greater sensitivity of humans to formate toxicity.
4. The discussion of methyl acetate vs. methyl formate should point out that, due to metabolism of methanol to formate, methyl acetate is, on a molar basis, equivalent to only one-half as much formate as methyl formate. Any extrapolation of data developed for methyl acetate should take that fact into account.
5. The Robust Summaries for each the formates are generally well organized and concisely describe the respective studies; however, there are a number of instances in which a summary of a study of one formate is listed in the Robust Summary for a different formate.

Thank you for this opportunity to comment.

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P.S. There were intermittent problems in downloading and/or printing portions of the Robust Summary/Test Plan and several pages of the version posted on the EPA web site, which greatly complicated the task of reviewing this test plan. EPA is strongly urged to fix whatever technical glitch is causing these difficulties.